

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
8 September 2000 (08.09.2000)

PCT

(10) International Publication Number
WO 00/51589 A3(51) International Patent Classification: A61K 31/365,
A61P 35/00, 35/04, 15/08, 19/10

(21) International Application Number: PCT/US00/05582

(22) International Filing Date: 3 March 2000 (03.03.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/122,953 5 March 1999 (05.03.1999) US
60/169,564 8 December 1999 (08.12.1999) US

(81) Designated States (national): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MX, MY, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(71) Applicant (for all designated States except US): THE UNITED STATES OF AMERICA, represented by THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES [US/US]; National Institutes of Health, Office of Technology Transfer, Suite 325, 6011 Executive Boulevard, Rockville, MD 20852 (US).

(72) Inventor; and

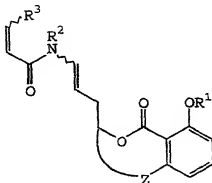
(75) Inventor/Applicant (for US only): BOYD, Michael, R. [US/US]; 5217 Fairgreene Way, Jhamsville, MD 21754 (US).

(88) Date of publication of the international search report:
12 July 2001(48) Date of publication of this corrected version:
2 August 2001

(74) Agents: LARCHER, Carol et al.; Leydig, Voit & Mayer, Ltd., Suite 4900, Two Prudential Plaza, 180 North Stetson, Chicago, IL 60601-6780 (US).

(15) Information about Correction:
see PCT Gazette No. 31/2001 of 2 August 2001, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: VACUOLAR-TYPE (H⁺)-ATPase-INHIBITING COMPOUNDS, COMPOSITIONS, AND USES THEREOF

(I)

(57) Abstract: The present invention provides vacuolar-type (H⁺)-ATPase-inhibiting compounds, compositions thereof, and methods of using them to treat or prevent a condition treatable by the inhibition of a vacuolar-type (H⁺)-ATPase. The composition of the present invention comprises a compound of the present invention and a carrier. The method of the present invention includes administering a vacuolar-type (H⁺)-ATPase-inhibiting-effective amount of a compound of the present invention. The compound of the present invention has formula (I) wherein R¹ and R² are H, saturated or unsaturated alkyl, aryl, R³CH₂-, R⁴CO-, or R⁵SO₂-, wherein R⁴ is H, saturated or unsaturated alkyl, or aryl; R³ is H, alkyl, aryl, an oxime, or an oxime methyl ether; the aromatic ring is unsubstituted or substituted; and Z is a contiguous linker comprising a chain of 0-10 atoms which, together with the five atoms beginning with the carbon of the aromatic ring in meta-relationship with OR¹ and ending with the carbon directly attached to the lactone oxygen of the lactone, integrally form a 5-17 membered ring; or a pharmaceutically acceptable salt, an ester, or a prodrug thereof.

WO 00/51589 A3